# AMENDMENTS TO THE SPECIFICATION

Material that was originally within references that were incorporated by reference is now included in the Description through the following paragraphs:

Insert the following paragraphs after paragraph 19 but before paragraph 20.

--Many methods of triangulation may be used in the present invention. While an illustrative emobiment of triangulation is described, the present invention should not be limited to the embodiments described. An estimate of the time of flight or propagation is made of a first arriving signal at a subscriber unit. The first signal received typically represents the shortest path between the base and subscriber, and the time of flight estimate allows the calculation of the distance between the subscriber and the base station. By calculating the distance to multiple, e.g., three, sites, a specific subscriber location can be calculated limited by the accuracies of the measurement timing and other processing delays.

In the preferred embodiment, the time of flight of the signal between each base and subscriber is calculated automatically. The processing steps preferably involve the transmission of a Pseudo Noise (PN) sequence coded signal time-aligned to under a chip accuracy (e.g., 1/16th of a chip), and correlating on this signal at the receiver using a correlation algorithm. Because the modulation sequence (e.g., a PN sequence) is known and used in synchronization/despreading, a precise time of reception of a given chip can be determined. By determining reception time for multiple related signals, a time delay can be calculated and used to determine a position estimate.

In one embodiment, the subscriber uses known PN sequence and offset information to determine which related PN chips from different bases (standard and/or auxiliary bases) that were transmitted at the same time, and also determines the time of reception of these related chips. From the difference between the reception times, a time differential and thus distance

differential is determined. Using the distance differentials and known positions of the bases, a position estimate is determined. Where a subscriber is only in communication with one or two bases, additional bases may be forced into an active set (including auxiliary sites, if needed) so that time measurements can be made by the subscriber.

In another embodiment, receiving base sites are controlled to make time measurements of selected chips, and the difference in receive time is used to similarly calculate the subscriber position. Where additional receive sites are needed because of interference and the like, auxiliary sites are controlled so as to receive the signals transmitted from the subscriber unit. If necessary, in case of an emergency, the subscriber unit is powered up to a maximum power level such that at least three base stations can receive and make a time estimate of the signal. Further, where more precise measurements are needed, a special location message can be transmitted to the subscriber. Upon receipt, the subscriber determines a chip/time offset for a response signal, encodes the offset and transmits the response signal. Upon decoding the offset and comparing the receive times of a same chip (e.g., the first chip of a frame) used in determining the offset, a delay compensated time value is determined for the various propagation paths, and the position determined therefrom. Finally, since it might be difficult to get a received signal at bases further away, an emergency load shedding can be performed at the nearby bases to provide extra range, since capacity can be traded off for range in a CDMA radio system. Thus coverage is improved, and location finding is made more reliably.

The relative time of reception of each signal is determined by using information about the leading edge (or alternately, the peaks) of related correlation peaks in the searcher, and adjusting this by an offset determined in a fine time alignment circuit. Preferably, related correlation peaks are those received on different branches but within one chip of each other. In this approach, the precise time of the leading edge is determined, along with the PN sequence number. Using the already determined PN sequence offset, and the system design

where the base PN sequence is the same for each base station, and transmitted at the same system time plus or minus a unique PN sequence offset, the difference in relative times yields a difference in propagation path delay.--

All of the above material was part of the application as filed because it was explicitly incorporated by reference. Therefore, no new matter has been added.